

IN THE SPECIFICATION:

Please replace paragraphs [0026] – [0028] as-filed, as indicated below.

[0026] An example of an etch system that is integrated with an ex-situ metrology tool with the capability of measuring CDs and film thickness is Applied Materials' TRANSFORMA™ system 400 (Figure 4). Detailed information describing Applied Materials' TRANSFORMA™ system has been disclosed in a commonly assigned U.S. patent application Ser. No. 10/428,145, titled "Method and Apparatus for Controlling Etch Processes During Fabrication of Semiconductor Devices", filed on May 1, 2003. The system comprises a controller 414, a chamber or "mainframe" 401, such as the CENTURA™ processing system for mounting a plurality of processing chambers 402, e.g., conventional etch reactors, such as the DPSII™ silicon etch chambers, photoresist stripping chambers, such as the AXIOM® from Applied Materials, Inc., and one or more transfer chambers 403, also called "load locks". In one embodiment of the present invention, two etch processing chambers [[402]] and two photoresist stripping chambers [[403]] are mounted to the mainframe 401. A robot 404 is provided within the mainframe 401 for transferring substrates between the processing chambers 402 and the transfer chambers 403. The transfer chambers 403 are connected to a factory interface 405, also known as a "mini environment" that maintains a controlled environment for the substrates.

[0027] The factory interface 405 comprises a pair of robots 407 that move substrates from at least one tool buffer 408 (e.g., at least one front opening unified pod (FOUP)). The tool buffer 408 comprises a plurality of substrates (not shown). These substrates comprise one or more reference substrates [[410]] and non-reference substrates [[412]]. The robots 407 move the non-reference substrates [[410]] to/from the metrology tool 406 and the load locks 403. The robot 404 moves the non-reference substrates from the load locks 403 to the process chambers 402 and 403 as well as amongst the process chambers 402 and 403. In accordance with the invention, a reference substrate [[410]] is moved

to the metrology tool 406 to determine metrology tool measurement drift and to perform metrology tool calibration.

[0028] The metrology tool 406 is integrated in the factory interface 405 and provides high-speed data collection and analysis for one or more substrates that enter the system 400. In accordance with one embodiment of the present invention, the metrology tool 406 is capable of measuring both CD and film thickness. Such a tool is a NanoSpec 9000 series tool available from NanoMetrics, Inc. In other embodiments of the invention, two or more metrology tools may be used to measure film CD and thickness. The metrology tool 406 could also be placed at different location within the process system 400 or be located separate from the processing system.